# NOV 2 6 2008

### Amendments to the Claims

## I. (Currently amended)

A compound represented by the formula:

wherein Ar is cyclopropyl, cyclohexyl, phenyl, naphthyl, thienyl, furyl, thiazolyl, oxazolyl, imidazolyl, pyrazolyl, triazolyl, pyridyl, pyrazinyl, benzo[b]thienyl, indolyl or indanyl, ring A is benzene which optionally has 1 to 5 substituent(s) at substitutable position(s) selected from

- (1) halogen atom;
- (2) hydroxy group;
- (3) amino group;
- (4) nitro group;
- (5) cyano group;
- (6) optionally substituted C<sub>1-6</sub> alkyl group;

- (7) optionally substituted C2-6 alkenyl group;
- (8) optionally substituted C<sub>2-6</sub> alkynyl group;
- (9) C<sub>6-14</sub> aryl group optionally substituted by 1 to 3 substituent(s) selected from halogen atom, hydroxy group, amino group, nitro group, cyano group, optionally halogenated C<sub>1-6</sub> alkyl group, mono- or di-C<sub>1-6</sub> alkyl-amino group, C<sub>6-14</sub> aryl group, mono- or di-C<sub>6-14</sub> aryl-amino group, C<sub>3-8</sub> cycloalkyl group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkylthio group, C<sub>1-6</sub> alkylsulfinyl group, C<sub>1-6</sub> alkylsulfonyl group, optionally esterified carboxyl group, carbamoyl group, thiocarbamoyl group, mono- or di-C<sub>1-6</sub> alkyl-carbamoyl group, mono- or di-C<sub>6-14</sub> aryl-carbamoyl group, sulfamoyl group, mono- or di-C<sub>1-6</sub> alkyl-sulfamoyl group and mono- or di-C<sub>6-14</sub> aryl-sulfamoyl group;
- (10) C<sub>6-14</sub> aryloxy group optionally substituted by 1 to 3 substituent(s) selected from halogen atom, hydroxy group, amino group, nitro group, cyano group, optionally halogenated C<sub>1-6</sub> alkyl group, mono- or di-C<sub>1-6</sub> alkyl-amino group, C<sub>6-14</sub> aryl group, mono- or di-C<sub>6-14</sub> aryl-amino group, C<sub>3-8</sub> cycloalkyl group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkylsulfinyl group, C<sub>1-6</sub> alkylsulfonyl group, optionally esterified carboxyl group, carbamoyl group, thiocarbamoyl group, mono- or di-C<sub>1-6</sub> alkyl-carbamoyl group, mono- or di-C<sub>6-14</sub> aryl-carbamoyl group, sulfamoyl group, mono- or di-C<sub>1-6</sub> alkyl-sulfamoyl group and mono- or di-C<sub>6-14</sub> aryl-sulfamoyl group;
- (11) C<sub>7-16</sub> aralkyloxy group optionally substituted by 1 to 3 substituent(s) selected from halogen atom, hydroxy group, amino group, nitro group, cyano group, optionally halogenated C<sub>1-6</sub> alkyl group, mono- or di-C<sub>1-6</sub> alkyl-amino group, C<sub>6-14</sub> aryl group, mono- or di-C<sub>6-14</sub> aryl-amino group, C<sub>3-8</sub> cycloalkyl group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkylsulfinyl group, C<sub>1-6</sub> alkylsulfonyl group, optionally esterified carboxyl group, carbamoyl group, thiocarbamoyl group, mono- or di-C<sub>1-6</sub> alkyl-carbamoyl group, mono- or di-C<sub>6-14</sub> aryl-carbamoyl group, sulfamoyl group, mono- or di-C<sub>1-6</sub> alkyl-sulfamoyl group and mono- or di-C<sub>6-14</sub> aryl-sulfamoyl group;
- (12) heterocyclic group (preferably furyl, pyridyl, thienyl, pyrazolyl, thiazolyl, oxazolyl) optionally substituted by 1 to 3 substituent(s) selected from halogen atom, hydroxy group, amino group, nitro group, cyano group, optionally halogenated  $C_{1-6}$  alkyl group, mono- or di- $C_{1-6}$  alkylamino group,  $C_{6-14}$  aryl group, mono- or di- $C_{6-14}$  aryl-amino group,  $C_{3-8}$  cycloalkyl group,  $C_{1-6}$

alkoxy group,  $C_{1-6}$  alkoxy- $C_{1-6}$  alkoxy group,  $C_{1-6}$  alkylthio group,  $C_{1-6}$  alkylsulfinyl group,  $C_{1-6}$  alkylsulfonyl group, optionally esterified carboxyl group, carbamoyl group, thiocarbamoyl group, mono- or di- $C_{1-6}$  alkyl-carbamoyl group, mono- or di- $C_{6-14}$  aryl-carbamoyl group, sulfamoyl group, mono- or di- $C_{1-6}$  alkyl-sulfamoyl group and mono- or di- $C_{6-14}$  aryl-sulfamoyl group;

- (13) mono- or di-C<sub>1-6</sub> alkyl-amino group;
- (14) mono- or di-C<sub>6-14</sub> aryl-amino group;
- (15) mono- or di-C<sub>7-16</sub> aralkyl-amino group;
- (16) N-C<sub>1-6</sub> alkyl-N-C<sub>6-14</sub> aryl-amino group;
- (17) N-C<sub>1-6</sub> alkyl-N-C<sub>7-16</sub> aralkyl-amino group;
- (18) C<sub>3-6</sub> cycloalkyl group;
- (19) optionally substituted C<sub>1-6</sub> alkoxy group;
- (20) C<sub>1-6</sub> alkylthio group;
- (21) C<sub>1-6</sub> alkylsulfinyl group;
- (22) C<sub>1-6</sub> alkylsulfonyl group;
- (23) optionally esterified carboxyl group;
- (24) C<sub>1-6</sub> alkyl-carbonyl group;
- (25) C<sub>3-8</sub> cycloalkyl-carbonyl group;
- (26) C<sub>6-14</sub> aryl-carbonyl group;
- (27) carbamoyl group;
- (28) thiocarbamoyl group;
- (29) mono- or di-C<sub>1-6</sub> alkyl-carbamoyl group;
- (30) mono- or di-C<sub>6-14</sub> aryl-carbamoyl group;
- (31) mono- or di-5- to 7-membered heterocyclyl-carbamoyl group;
- (32) sulfamoyl group;
- (33) mono- or di-C<sub>1-6</sub> alkyl-sulfamoyl group;
- (34) mono- or di-C<sub>6-14</sub> aryl-sulfamoyl group;

Xa is a bond or a spacer having a main chain of 1 to 5 atom(s),

Xb is  $(CH_2)_n$  wherein n is 1 or 2,

Xc is O,

 $X = -O^-$ ,  $-CH_2$ -,  $-CH_2$ CH<sub>2</sub>-, or  $-CH_2$ CH<sub>2</sub>CH<sub>2</sub>-,  $R^1$  is a hydroxy group or  $C_{1-10}$  alkoxy group, provided that [6-(4-biphenylyl)methoxy-2-tetralin]acetic acid; methyl [6-(4-biphenylyl)methoxy-2-tetralin]acetate; [7-(4-biphenylyl)methoxy-1,2,3,4-tetrahydro-2-oxo-3-quinoline]acetic acid; and methyl [7-(4-biphenylyl)methoxy-1,2,3,4-tetrahydro-2-oxo-3-quinoline]acetate are excluded, or a salt thereof.

#### 2. (Cancelled)

- 3. (Original) The compound of claim 1, wherein the cyclic group represented by Ar is an aromatic hydrocarbon group.
- 4. (Original) The compound of claim 1, wherein Xa is a bond.
- 5. (Original) The compound of claim 1, wherein ring A is benzene.
- 6. (Original) The compound of claim 1, wherein Xb is -CH<sub>2</sub>-.

### 7-11. (Cancelled)

- 12. (Original) The compound of claim 1, wherein R<sup>1</sup> is a hydroxy group.
- 13. (Currently amended) The compound of claim 1, which is represented by the formula:

$$Ar^{1}$$
 $Xa^{1}$ 
 $Ar^{2}$ 
 $CH_{2}COOH$ 

$$Ar^1 - Xa^1 + A^2$$
  $O$   $X$   $C$   $COOH$   $H_2$ 

wherein Ar<sup>1</sup> is phenyl group or indanyl group,

Xa<sup>1</sup> is a bond or a spacer having a main chain of 1 to 5 atom(s), and
ring A<sup>2</sup> is benzene which optionally is substituted by said 1 to 5 substituent(s).

14. (Currently amended) The compound of claim 1, which is represented by the formula:

$$Ar^2$$
  $Xa^2$   $A^3$   $CH_2COOH$ 

$$Ar^2 - Xa^2 + A^3$$
 $C - COOH$ 
 $H_2$ 

wherein Ar<sup>2</sup> is thiazolyl group,

Xa<sup>2</sup> is a bond or a spacer having a main chain of 1 to 5 atom(s), and ring A<sup>3</sup> is benzene which optionally is substituted by said 1 to 5 substituent(s).

15. (Previously presented) A pharmaceutical composition comprising the compound of claim 1 with a pharmacologically acceptable carrier.

### 16-17. (Cancelled)

18. (Currently amended) A GPR40 receptor function modulator comprising a compound represented by the formula:

wherein ring A<sup>1</sup> is benzene which optionally has 1 to 5 substituent(s) at substitutable position(s) selected from

- (1) halogen atom;
- (2) hydroxy group;
- (3) amino group;
- (4) nitro group;
- (5) cyano group;
- (6) optionally substituted C<sub>1-6</sub> alkyl group;
- (7) optionally substituted C<sub>2-6</sub> alkenyl group;
- (8) optionally substituted C<sub>2-6</sub> alkynyl group;
- (9) C<sub>6-14</sub> aryl group optionally substituted by 1 to 3 substituent(s) selected from halogen atom, hydroxy group, amino group, nitro group, cyano group, optionally halogenated C<sub>1-6</sub> alkyl group, mono- or di-C<sub>1-6</sub> alkyl-amino group, C<sub>6-14</sub> aryl group, mono- or di-C<sub>6-14</sub> aryl-amino group, C<sub>3-8</sub> cycloalkyl group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkylthio group, C<sub>1-6</sub> alkylsulfinyl group, C<sub>1-6</sub> alkylsulfonyl group, optionally esterified carboxyl group, carbamoyl group, thiocarbamoyl group, mono- or di-C<sub>1-6</sub> alkyl-carbamoyl group, mono- or di-C<sub>6-14</sub> aryl-carbamoyl group, sulfamoyl group, mono- or di-C<sub>1-6</sub> alkyl-sulfamoyl group and mono- or di-C<sub>6-14</sub> aryl-sulfamoyl group;
- (10)  $C_{6-14}$  aryloxy group optionally substituted by 1 to 3 substituent(s) selected from halogen atom, hydroxy group, amino group, nitro group, cyano group, optionally halogenated  $C_{1-6}$  alkyl

group, mono- or di- $C_{1-6}$  alkyl-amino group,  $C_{6-14}$  aryl group, mono- or di- $C_{6-14}$  aryl-amino group,  $C_{3-8}$  cycloalkyl group,  $C_{1-6}$  alkoxy group,  $C_{1-6}$  alkoxy group,  $C_{1-6}$  alkylsulfinyl group,  $C_{1-6}$  alkylsulfinyl group, optionally esterified carboxyl group, carbamoyl group, thiocarbamoyl group, mono- or di- $C_{1-6}$  alkyl-carbamoyl group, mono- or di- $C_{6-14}$  aryl-carbamoyl group, sulfamoyl group, mono- or di- $C_{1-6}$  alkyl-sulfamoyl group and mono- or di- $C_{6-14}$  aryl-sulfamoyl group;

- (11) C<sub>7-16</sub> aralkyloxy group optionally substituted by 1 to 3 substituent(s) selected from halogen atom, hydroxy group, amino group, nitro group, cyano group, optionally halogenated C<sub>1-6</sub> alkyl group, mono- or di-C<sub>1-6</sub> alkyl-amino group, C<sub>6-14</sub> aryl group, mono- or di-C<sub>6-14</sub> aryl-amino group, C<sub>3-8</sub> cycloalkyl group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkylsulfinyl group, C<sub>1-6</sub> alkylsulfonyl group, optionally esterified carboxyl group, carbamoyl group, thiocarbamoyl group, mono- or di-C<sub>1-6</sub> alkyl-carbamoyl group, mono- or di-C<sub>6-14</sub> aryl-carbamoyl group, sulfamoyl group, mono- or di-C<sub>1-6</sub> alkyl-sulfamoyl group and mono- or di-C<sub>6-14</sub> aryl-sulfamoyl group;
- (12) heterocyclic group (preferably furyl, pyridyl, thienyl, pyrazolyl, thiazolyl, oxazolyl) optionally substituted by 1 to 3 substituent(s) selected from halogen atom, hydroxy group, amino group, nitro group, cyano group, optionally halogenated C<sub>1-6</sub> alkyl group, mono- or di-C<sub>1-6</sub> alkylamino group, C<sub>6-14</sub> aryl group, mono- or di-C<sub>6-14</sub> aryl-amino group, C<sub>3-8</sub> cycloalkyl group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkoxy group, C<sub>1-6</sub> alkylthio group, C<sub>1-6</sub> alkylsulfinyl group, C<sub>1-6</sub> alkylsulfinyl group, carbamoyl group, thiocarbamoyl group, mono- or di-C<sub>1-6</sub> alkyl-carbamoyl group, mono- or di-C<sub>6-14</sub> aryl-carbamoyl group, sulfamoyl group, mono- or di-C<sub>1-6</sub> alkyl-sulfamoyl group and mono- or di-C<sub>6-14</sub> aryl-sulfamoyl group;
- (13) mono- or di-C<sub>1-6</sub> alkyl-amino group;
- (14) mono- or di-C<sub>6-14</sub> aryl-amino group;
- (15) mono- or di-C<sub>7-16</sub> aralkyl-amino group;
- (16) N-C<sub>1-6</sub> alkyl-N-C<sub>6-14</sub> aryl-amino group;
- (17) N-C<sub>1-6</sub> alkyl-N-C<sub>7-16</sub> aralkyl-amino group;
- (18) C<sub>3-8</sub> cycloalkyl group;
- (19) optionally substituted C<sub>1-6</sub> alkoxy group;

- (20) C<sub>1-6</sub> alkylthio group;
- (21) C<sub>1-6</sub> alkylsulfinyl group;
- (22) C<sub>1-6</sub> alkylsulfonyl group;
- (23) optionally esterified carboxyl group;
- (24) C<sub>1-6</sub> alkyl-carbonyl group;
- (25) C<sub>3-8</sub> cycloalkyi-carbonyl group;
- (26) C<sub>6-14</sub> aryl-carbonyl group;
- (27) carbamoyl group;
- (28) thiocarbamoyl group;
- (29) mono- or di-C<sub>1-6</sub> alkyl-carbamoyl group;
- (30) mono- or di-C<sub>6-14</sub> aryl-carbamoyl group;
- (31) mono- or di-5- to 7-membered heterocyclyl-carbamoyl group;
- (32) sulfamoyl group;
- (33) mono- or di-C<sub>1-6</sub> alkyl-sulfamoyl group;
- (34) mono- or di-C<sub>6-14</sub> aryl-sulfamoyl group;

Xb is (CH<sub>2</sub>)<sub>n</sub> wherein n is 1 or 2,

Xc is O,

 $X = -O_{-}, -CH_{2-}, -CH_{2}CH_{2-}, \text{ or } -CH_{2}CH_{2}CH_{2-},$ 

R1 is a hydroxy group or a C1-10 alkoxy group, or a salt thereof.

#### 19-20. (Cancelled)

- 21. (Previously presented) A method for the prophylaxis or treatment of diabetes, which comprises administering a therapeutically effective amount of the compound of claim 1 to a patient in need thereof.
- 22. (Previously presented) A method for promoting insulin secretion, which comprises administering a therapeutically effective amount of the compound of claim 1 to a patient in need thereof.

23. (Previously presented) A method of modulating GPR40 receptor function, which comprises administering a therapeutically effective amount of the compound of claim 1 to a patient in need thereof.